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PROCEEDINGS
OF
THE ROYAL IRISH ACADEMY.

1840.

No. 24.

June 8.

SIR WM. R. HAMILTON, LL.D., President, in the Chair.

George Wilkinson, Esq., and G. Willoughby Hemans, Esq., were elected Members of the Academy.

The following note, by John Ball, Esq., M.R.I.A., on the Aurora of the 24th of April, was read by the Secretary:

“It being possible that a very brilliant Aurora, which occurred on the night of Friday, April 24, may have been the subject of observation in different parts of the country, I offer the following notes, taken at the time, as a contribution to the facts which it is so desirable to collect together, in reference to these phenomena. Being unprovided with instruments, the only point of interest which I was able to attend to was the *period* at which the more observable *rapid* changes took place. To fix the position of such changes, it would have been desirable to note their exact direction by the compass, which might be done where there are several observers; but my whole attention being directed to the time, I was unable to effect this. To supply as far as possible the deficiency, I have endeavoured, by rude outlines,

to represent some of the remarkable appearances, the period of whose occurrence I have noted down; and these will probably enable other observers to recognize the changes sufficiently to allow of a comparison of the observed period of their occurrence.

“The time given is, as accurately as I could ascertain it, Liverpool mean time, which, of course, may easily be reduced to Greenwich or Dublin time, by persons anxious to compare their observations.

“Before 10 o'clock, P.M., I remarked a bank of light in the northern horizon, which gradually assumed the form of a very well defined arch, the luminous part being of less breadth than is usually the case. The arch continued slowly to rise, without exhibiting any appearance of streamers, until some minutes past ten, P.M., when the altitude of its upper surface may have been about 10° ; it then began to exhibit an appearance resembling the glow above a furnace, and at 10^h 10^m 8^s a very brilliant streamer ascended from a little to the east of the centre of the arch.

“The phenomena of streamers were now, for some minutes, exhibited with great brilliancy. At 10^h 12^m 49^s, a broad column of bright light was seen about the centre of the arch, as in the subjoined sketch.

“Up to this time the arch had preserved its regular form; but a separation now gradually took place, the bow seeming as if broken in the middle, and the eastern side remaining

throughout the most brilliant. The changes now succeeded each other so rapidly as to defy observation, the limits of the

dark interior part continually altering, and at one time appearing as if half the arch were refracted from its place.

“The arch continued to separate, and, as it were, fall to pieces, the streamers diminishing in brilliancy until 10^h 17^m 5^s, when a broad column rose from very near the horizon, on the eastern side.

“This column appeared gradually to melt away, when a very brilliant streamer arose nearly in the same place at

10^h 17^m 53^s, remaining fixed for a few moments; at 10^h 18^m 12^s this resolved itself into several bright streamers. I was unable, after this period, to fix upon any sufficiently marked appearances to admit of being noted down; the Aurora, however, continued for some time longer, till gradually obscured by a thick fog which came on at this time. Throughout the whole period, the dark part, through which I observed stars of the fifth magnitude, was remarkably well defined, presenting at times the appearance of a mountain range seen at a distance.

“I have offered this very imperfect sketch, in the hope that this fine Aurora has not escaped the notice of more accurate and better prepared observers; for, if we were supplied with a sufficient number even of such rough outlines as the preceding, we should be better enabled to answer a question very important to the subject, namely—whether different observers see the same Aurora at the same time?”

Dr. Robinson presented a specimen of Meteor Paper, similar to that of Carolath, which he had received from the Countess of Caledon, with a notice of the circumstances of its formation. It was found, last Spring, covering a considerable tract of meadow land, the property of Lord Radnor, in Gloucestershire. The tract of country between Lesblade and Farringdon is flooded by the Isis every Spring, but not more than usually this season. When the waters subsided, the surface of the ground was covered with this substance to such an extent as to make its removal and destruction necessary to permit the growth of the grass; some of the pieces covering ten and twelve acres in continuous and unbroken sheets. Nothing of the kind had been noticed before by the oldest farmers. Portions of it were found on land which had not been under water. It is denser than any which Dr. Robinson had seen, and contains a larger proportion of the shields of Infusoria; but the tissue is composed chiefly of the *conferva rivularis*.

Mr. Farran exhibited to the Academy a Babylonian brick, with cuneiform characters.

Rev. H. Lloyd, V.P., read the following extract of a letter from the Rev. Thomas Knox, accompanying a tabular view of the results of rain-gauges observed at Toomavara, County of Tipperary, by himself, and at Monks Eleigh, Suffolk, by the Rev. Henry B. Knox, during the year 1839; together with plates of the rain curves.

“ River Glebe, Nenagh, May 28, 1840.

“ I send the combined results, for the year 1839, of a rain gauge kept by my cousin Henry and of my own; they are made on the same principle and construction as that of which I sent the previous account. As Toomavara is about forty miles from the west coast of Ireland, and Monks Eleigh, in Suffolk, (where my cousin Henry resides,) about a similar distance from the east coast of England, we think the comparative view of the direction and amount of rain may, perhaps, prove interesting to the Academy.

“ There are a few points to which we wish to draw more particular attention: In the first place, there is a striking resemblance between the mean curve of the twelve months, and that from Winter to Summer solstice at each place respectively, so that the latter nearly represents the nature of the yearly rain of the place—I mean with regard to the point of the compass from which it comes; this you will see by comparing plates thirteen and eighteen.

“ Again, in the mean for each season, the greatest amount of rain, at Toomavara, is invariably from S.W., whereas, at Monks Eleigh, in Winter it is from W., in Spring from N., in Summer E., and in Autumn S. Again, when the year is divided into two periods, from Autumnal to Spring, and from Spring to Autumnal Equinox, the greatest rain, for each period, is at Toomavara from the S. W., and at Monks Eleigh from W. During the entire year, the greatest amount at Toomavara is from the S. W., but at Monks Eleigh from W.; and, though

the gross total of rain at Toomavara is nearly double that at Monks Eleigh for the year, still the easterly rains at the latter place are almost equal in amount, and, during the Summer and Autumn, much more considerable. If, on an examination of the mean results of many years, the *same directions* of rain are found to be nearly the same in amount, it will render the subject very interesting to meteorologists.

"I have added also a plate of the years 1838 and 1839, for Toomavara alone; the mode in which the curves are described is stated in the Proceedings for 1838, No. 10, p. 146.

"On some future occasion, we hope to be able to lay before the Academy the results of many years."

A Comparative View of the Results of Rain-Gauges observed at Toomavara, County of Tipperary, by Rev. Thomas Knox, and at Monks Eleigh in Suffolk, by Rev. Henry B. Knox.

12 Months.	S.	S. W.	W.	N. W.	N.	N. E.	E.	S. E.	Total.
December { T.	·469	1·034	·631	·188	·081	·028	·050	·133	2·614
{ M. E.	·421	·333	·431	·150	·040	—	·015	·070	1·460
January { T.	·155	·926	1·080	·096	·061	·050	·010	·010	2·388
{ M. E.	·147	·246	·705	·099	·078	·075	·033	·070	1·453
February { T.	·383	1·333	1·073	·386	·124	·212	·296	·202	4·009
{ M. E.	·157	·326	·636	·080	·059	·080	·194	·213	1·745
March .. { T.	·509	1·088	1·188	·340	·218	·136	·312	·388	4·179
{ M. E.	·251	·345	·128	·229	·099	·020	·040	·110	1·222
April ... { T.	·152	·458	·571	·162	·105	·341	·300	·176	2·265
{ M. E.	·058	·218	·528	·102	·206	·060	·178	·002	1·352
May { T.	·110	·461	·205	·070	·172	·032	·045	·312	1·407
{ M. E.	·008	—	·003	·031	·593	·352	·043	—	1·030
June { T.	·316	1·371	·255	·055	·036	·499	·200	·130	2·862
{ M. E.	·176	·200	·290	·517	·636	·172	·645	·039	2·675
July { T.	·317	1·281	·733	·483	·832	·840	·837	·245	5·568
{ M. E.	·207	·113	·282	·224	·140	·051	·719	·383	2·119
August .. { T.	·236	1·188	·460	·087	·200	·062	·160	·169	2·562
{ M. E.	·044	·176	·246	·207	·186	·520	·100	·015	1·494
Septem... { T.	·712	2·428	1·061	·115	·335	·047	·075	·515	5·288
{ M. E.	·442	·431	·662	·593	·291	·213	·228	·287	3·147
October .. { T.	·306	·848	·724	·399	·905	·810	·187	·201	4·380
{ M. E.	·201	·106	·071	·085	·110	·308	·155	·150	1·186
Novem... { T.	·584	·280	·169	·259	·046	·021	·629	1·042	3·030
{ M. E.	·562	·262	·389	·075	·338	·176	·742	·369	2·913
Total ... { T.	4·249	12·696	8·150	2·640	3·115	3·078	3·101	3·523	40·552
{ M. E.	2·674	2·756	4·371	2·392	2·776	2·027	3·092	1·708	21·796

• Mean Results, &c. &c.	S.	S. W.	W.	N. W.	N.	N. E.	E.	S. E.
Mean of Winter... { T.	·336	1·098	·928	·223	·089	·097	·119	·115
{ M. E.	·242	·302	·591	·110	·059	·052	·081	·118
Do. Spring..... { T.	·257	·669	·655	·191	·105	·170	·219	·292
{ M. E.	·106	·188	·220	·117	·299	·144	·087	·037
Do. Summer..... { T.	·290	1·280	·483	·208	·356	·467	·399	·181
{ M. E.	·142	·163	·273	·316	·321	·248	·488	·146
Do. Autumn..... { T.	·534	1·185	·651	·258	·429	·293	·297	·586
{ M. E.	·402	·266	·374	·251	·246	·232	·375	·269
Total from Winter to Summer Solstice, Dec. 1838, June 1839 { T.	1·720	5·858	4·618	1·245	·776	1·278	1·180	1·238
{ M. E.	1·036	1·370	2·142	·659	1·085	·740	1·100	·475
Total from Summer to Winter Solstice, June to Dec. 1839. { T.	2·761	6·628	3·315	1·365	2·337	1·940	2·195	2·973
{ M. E.	2·157	1·376	1·906	1·621	1·962	1·409	2·050	1·520
Total from Autumnal to Spring Equinox, Sept. 1838, to March 1839. { T.	2·649	6·611	5·068	1·291	·982	·594	1·741	1·318
{ M. E.	1·489	1·796	2·642	·810	1·628	·602	1·555	·831
Total from Spring to Autumnal Equinox, March to Sept. 1839. { T.	1·816	7·058	3·768	1·118	1·745	1·875	1·660	1·273
{ M. E.	·940	1·178	2·032	1·488	1·870	1·362	1·913	·726

William Pike, Esq. presented to the Academy an Irish Quern, and some other ancient remains, found at Roughan Island.

On removing the dam from the millrace, leading from Roughan lake, near Dungannon, when the water subsided, an island appeared nearly in the middle of the lake, which, on examination, appeared to have been artificially formed of timber and peat. The quern presented was found on the surface; and numerous fragments of ancient pottery, and bones, and a few bronze spear heads, were discovered at the depth of a few inches.

Mr. Patterson exhibited to the Meeting a massive Gold Ring, (of the form supposed to be the ancient ring-money,) recently found near Belfast.

The President continued his account of his "Second Series of Researches respecting Vibration."

DONATIONS.

Journal of the Royal Asiatic Society. No. XI. Presented by the Society.

Comptes Rendus Hebdomadaires des Seances de l'Academie des Sciences. Premier Semestre, 1840, Nos. 13—19, and Index. Presented by the Institute.

A Quern, Fragments of Pottery, and Animal Remains, found on Roughan Island. Presented by Wm. Pike, Esq.

A Letter to the President of the Royal Irish Academy, in reply to certain Charges made against George Petrie, Esq. Presented by the Author.

A Manuscript Copy of Keating's History of Ireland, by Andrew M'Curtin, dated at Ibrickan, County of Clare, A.D. 1703. Presented by Richard Carmichael, Esq.

A bronze Axe. Presented by the same.

June 22.

SIR WM. R. HAMILTON, LL.D., President, in the Chair.

The Rev. Dr. Todd continued his account of the contents of the Book of Lismore.

The tracts next in order in this volume are legends of ecclesiastical history,—as the legend of the venerable Bede; of St. Petronilla, the daughter of St. Peter; of the discovery of the Sybilline Oracle, in a stone coffin at Rome; of St. Gregory the Great; the heresy of the Empress Justina. Then follow tracts on the origin of some of the minor ceremonies of the mass; an account of the successors of Charlemagne; the controversy of Archbishop Lanfranc with the Romans, about Transubstantiation; a battle between the priests of Rome and the devil; extracts from the voyage of Marco Polo, translated into Irish; a very ancient tract on the wars of the celebrated Calaghan Cashel, King of Munster, with the Danes, in the tenth century; a romantic tale, entitled, The Adventures of Teige, the son of Cian, the son of Oilliol Olum, King of